

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-23 (Canceled).

Claim 24 (New): An analyzer, comprising a monochromator consisting of a single-crystal lithium fluoride doped with at least 0.018 mol per kg of a divalent positive ion M present in the fluorinated state.

Claim 25 (New): The analyzer as claimed in claim 24, wherein the ionic radius of the divalent ion M ranges from 55 to 80 picometers.

Claim 26 (New): The analyzer as claimed in claim 25, wherein M is present in the fluoride in an amount of at least 0.02 mol per kg.

Claim 27 (New): The analyzer as claimed in claim 26, wherein M is present in the fluoride in an amount of at least 0.023 mol per kg.

Claim 28 (New): The analyzer as claimed in claim 27, wherein M is present in the fluoride in an amount of at least 0.025 mol per kg.

Claim 29 (New): The analyzer as claimed in claim 24, wherein M is present in the fluoride in an amount of at most 0.082 mol per kg.

Claim 30 (New): The analyzer as claimed in claim 29, wherein M is present in the fluoride in an amount of at most 0.045 mol per kg.

Claim 31 (New): The analyzer as claimed in claim 24, wherein M is Mg^{2+} .

Claim 32 (New): The analyzer as claimed in claim 24, wherein M is Co^{2+} .

Claim 33 (New): The analyzer as claimed in claim 24, wherein M is Zn^{2+} .

Claim 34 (New): The analyzer as claimed in claim 24, wherein M is a mixture of at least two ions chosen from Mg^{2+} , Zn^{2+} and Co^{2+} .

Claim 35 (New): The analyzer as claimed in claim 24, wherein the fluoride is present in the form of a cube or a parallelepiped.

Claim 36 (New): The analyzer as claimed in claim 24, wherein the volume of the fluoride ranges from $2 \cdot 5 \times 10^{-3} \text{ cm}^3$ to 30 cm^3 .

Claim 37 (New): The analyzer as claimed in claim 36, wherein the volume of the fluoride ranges from 0.01 to 20 cm^3 .

Claim 38 (New): The analyzer as claimed in claim 24, wherein the fluoride has a cleaved surface.

Claim 39 (New): The analyzer as claimed in claim 24, wherein the fluoride has a surface that is ground and then treated in an acid medium or polished.

Claim 40 (New): The analyzer as claimed in claim 24, comprising at least one scintillator consisting of a rare-earth halide.

Claim 41 (New): The analyzer as claimed in claim 40, wherein the rare-earth halide is CeCl_3 -doped LaCl_3 or CeBr_3 -doped LaBr_3 .

Claim 42 (New): A method of analyzing an element of a specimen by means of the analyzer as claimed in claim 24, wherein said analyzer comprises a detector consisting of a scintillator, said scintillator being set on a line having a wavelength of less than 3 Å.

Claim 43 (New): The method as claimed in claim 42, wherein the scintillator is set on a line having a wavelength of less than 2 Å.

Claim 44 (New): The method as claimed in claim 43, wherein the scintillator is set on a line having a wavelength of less than 1.5 Å.

Claim 45 (New): A single-crystal lithium fluoride doped with 0.023 to 0.082 mol per kg of a divalent positive ion M present in the fluorinated state.

Claim 46 (New): The fluoride as claimed in claim 45, wherein the ionic radius of the divalent ion M ranges from 55 to 80 picometers.

Claim 47 (New): The fluoride as claimed in claim 46, wherein M is present in an amount of at least 0.025 mol per kg.

Claim 48 (New): The fluoride as claimed in claim 47, wherein M is present in an amount of at most 0.045 mol per kg.

Claim 49 (New): The fluoride as claimed in claim 45, wherein M is Mg^{2+} .

Claim 50 (New): The fluoride as claimed in claim 45, wherein M is Co^{2+} .

Claim 51 (New): The fluoride as claimed in claim 45, wherein M is Zn^{2+} .

Claim 52 (New): The fluoride as claimed in claim 45, wherein M is a mixture of at least two ions chosen from Mg^{2+} , Zn^{2+} and Co^{2+} .

Claim 53 (New): The fluoride as claimed in claim 45, wherein said fluoride is present in the form of a cube or a parallelepiped.

Claim 54 (New): The fluoride as claimed in claim 45, wherein the volume of said fluoride ranges from $2.5 \times 10^{-3} \text{ cm}^3$ to 30 cm^3 .

Claim 55 (New): The fluoride as claimed in claim 54, wherein the volume ranges from 0.01 to 20 cm^3 .

Claim 56 (New): The fluoride as claimed in claim 45, wherein said fluoride has a cleaved surface.

Claim 57 (New): The fluoride as claimed in claim 45, wherein said fluoride has a surface that is ground and then treated in an acid medium or polished.

Claim 58 (New): The use of a fluoride of claim 45 as monochromator.